FIG. 1

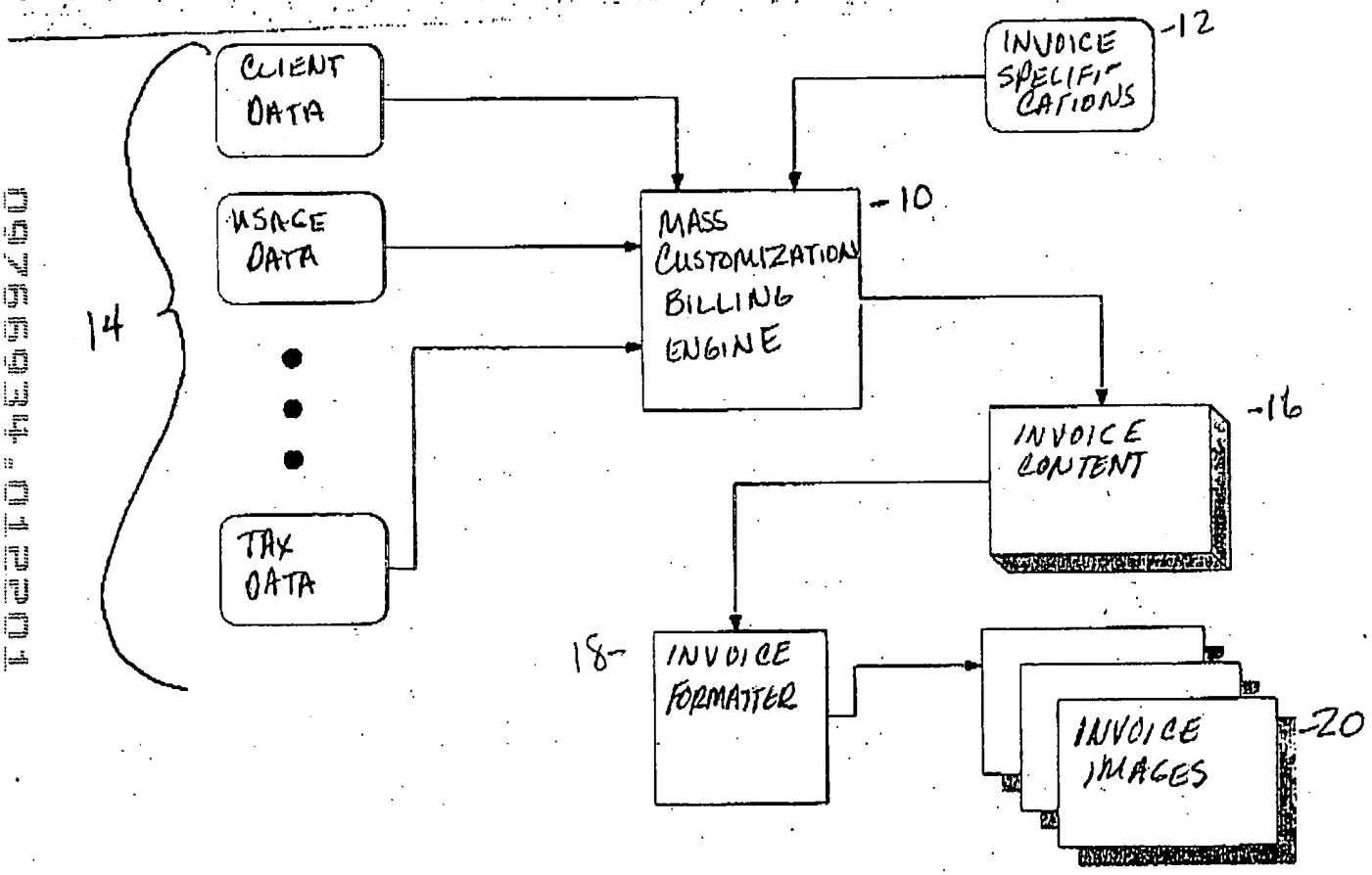

CLIENT DATA
USAGE DATA
TAX DATA
14
INVOICE SPECIFICATIONS
12
MASS CUSTOMIZATION BILLING ENGINE
10
INVOICE CONTENT
16
INVOICE FORMATTER
18
INVOICE IMAGES
20

Fig. 2

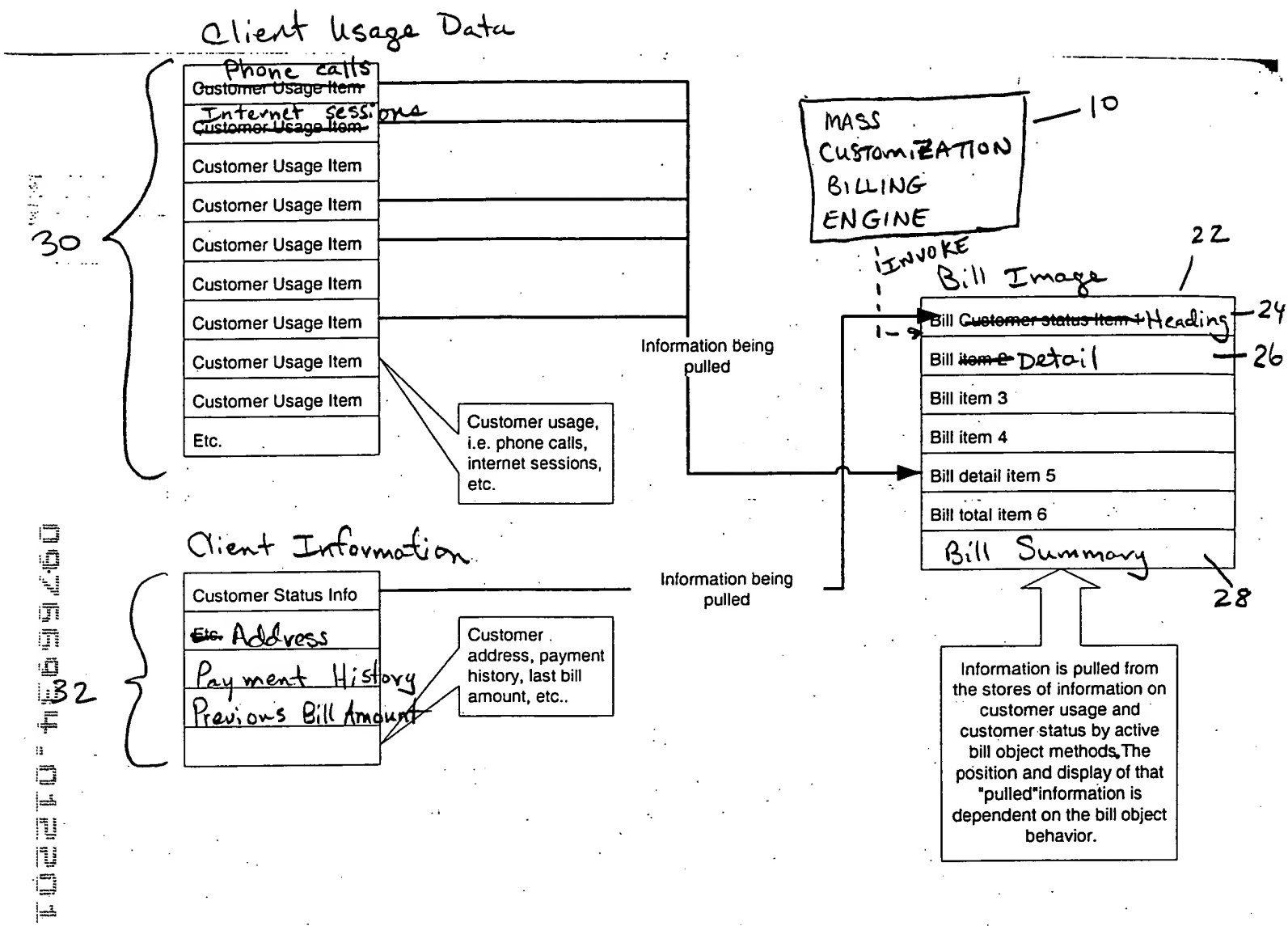

Client Usage Data
Phone calls
Customer Usage Item
Internet sessions
Customer Usage Item
Customer Usage Item
Customer Usage Item
Customer Usage Item
Customer Usage Item
Customer Usage Item
Customer Usage Item
Customer Usage Item
Etc.
30
Customer usage, i.e. phone calls, internet sessions, etc.
MASS CUSTOMIZATION BILLING ENGINE
10
INVOKE
Bill Image
22
Bill Customer status item 1 Heading
24
Bill item 2 Detail
26
Bill item 3
Bill item 4
Bill detail item 5
Bill total item 6
Bill Summary
28
Information being pulled
Information being pulled
Client Information
Customer Status Info
Etc. Address
Payment History
Previous Bill Amount
32
Customer address, payment history, last bill amount, etc..
Information is pulled from the stores of information on customer usage and customer status by active bill object methods. The position and display of that "pulled" information is dependent on the bill object behavior.

FIG. 3

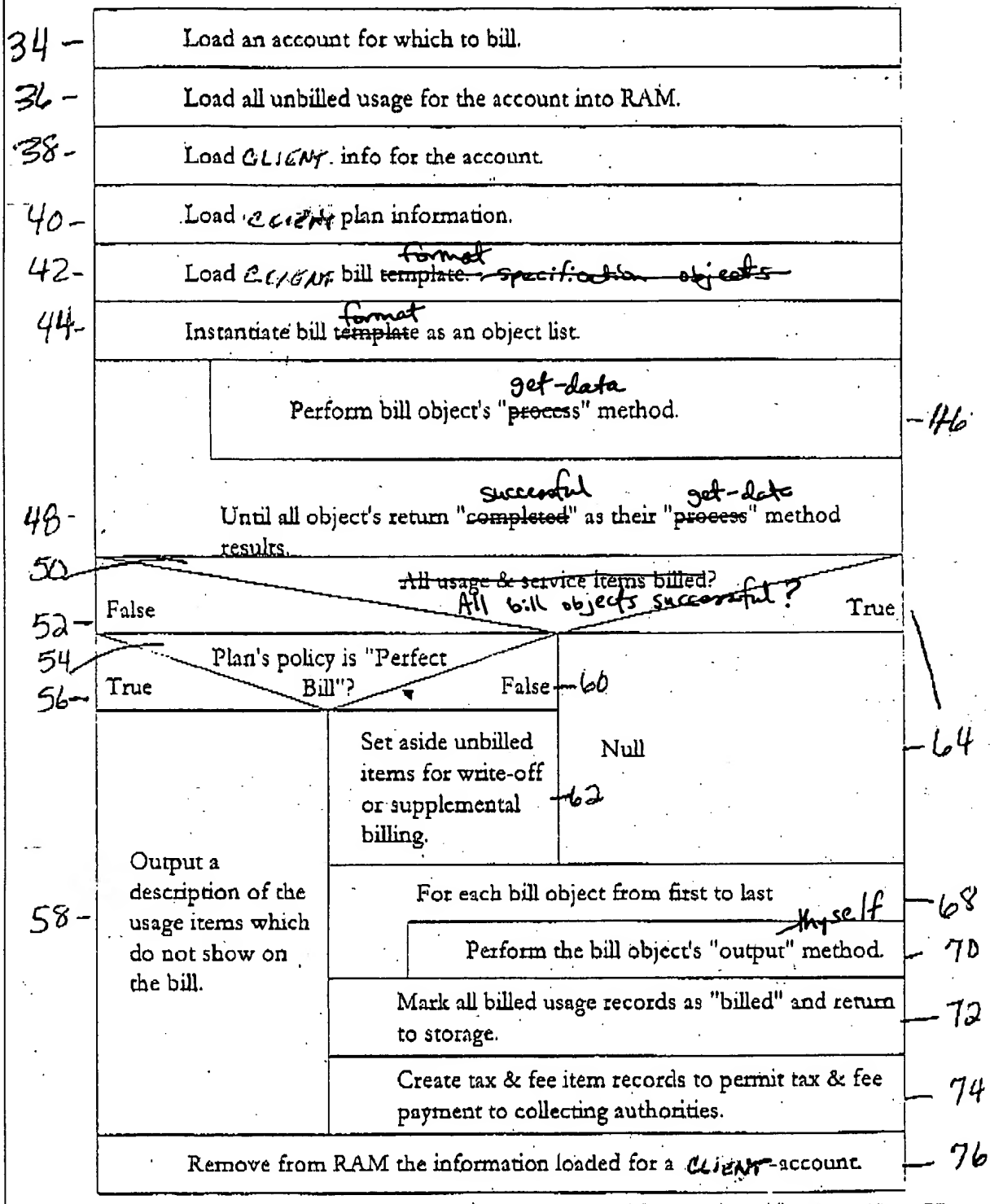

34 – Load an account for which to bill.
36 – Load all unbilled usage for the account into RAM.
38 – Load CLIENT. info for the account.
40 – Load CLIENT plan information.
42 – Load CLIENT bill ~~template.~~ format ~~specification objects~~
44 – Instantiate bill ~~template~~ format as an object list.
Perform bill object's "~~process~~" get-data method.
146
48 – Until all object's return "~~completed~~" successful as their "~~process~~" get-data method results.
50
~~All usage & service items billed?~~ All bill objects successful?
False
True
52 –
54
Plan's policy is "Perfect Bill"?
True
False
56 –
60
Set aside unbilled items for write-off or supplemental billing.
62
Null
64
58 – Output a description of the usage items which do not show on the bill.
For each bill object from first to last
68
~~myself~~
Perform the bill object's "output" method.
70
Mark all billed usage records as "billed" and return to storage.
72
Create tax & fee item records to permit tax & fee payment to collecting authorities.
74
Remove from RAM the information loaded for a CLIENT account.
76

FIG. 4

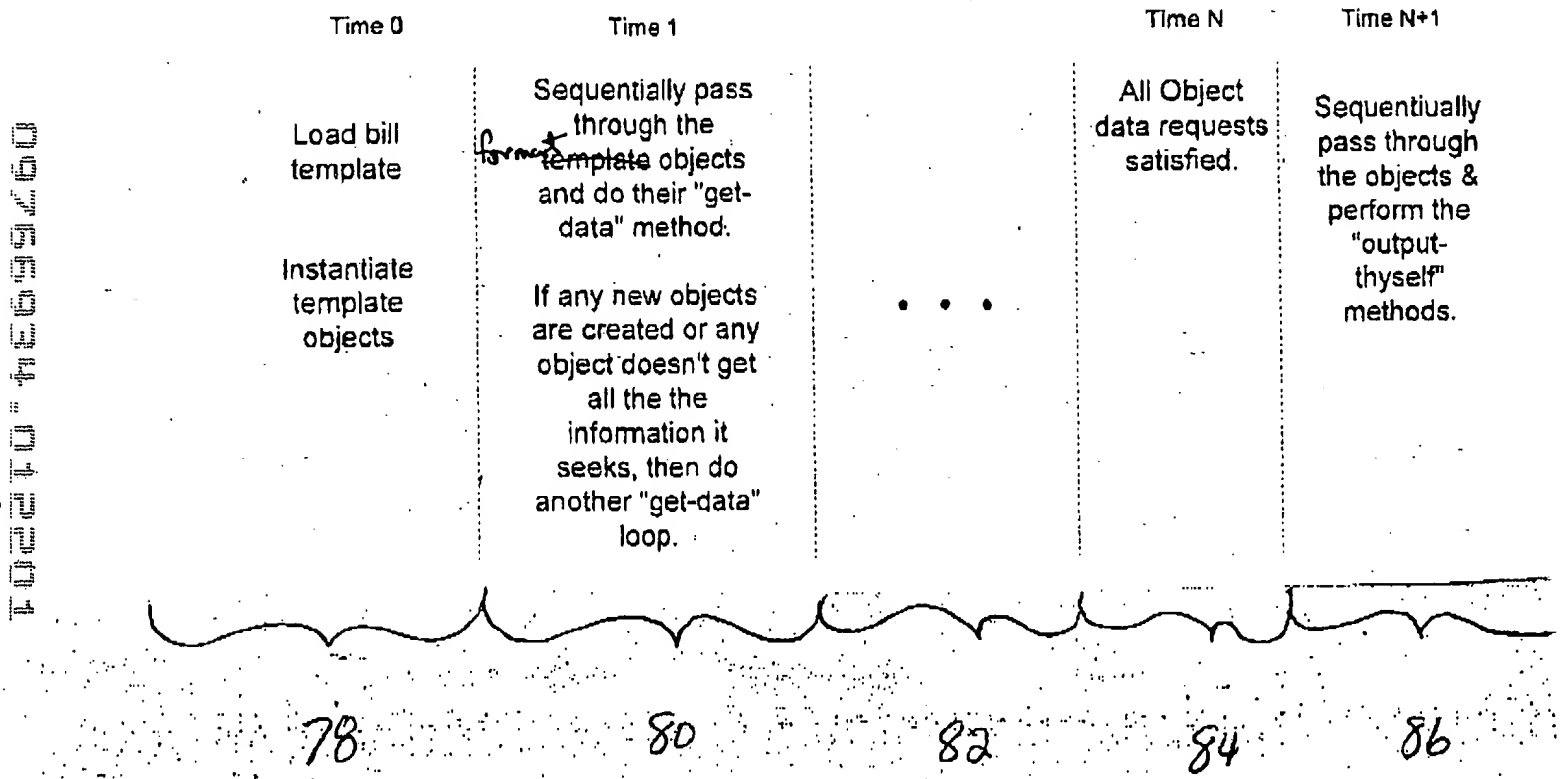

Time 0
Time 1
Time N
Time N+1
Load bill template
Instantiate template objects
Sequentially pass through the ~~template~~ objects and do their "get-data" method.
If any new objects are created or any object doesn't get all the the information it seeks, then do another "get-data" loop.
All Object data requests satisfied.
Sequentiually pass through the objects & perform the "output-thyself" methods.
78
80
82
84
86

FIG. 5

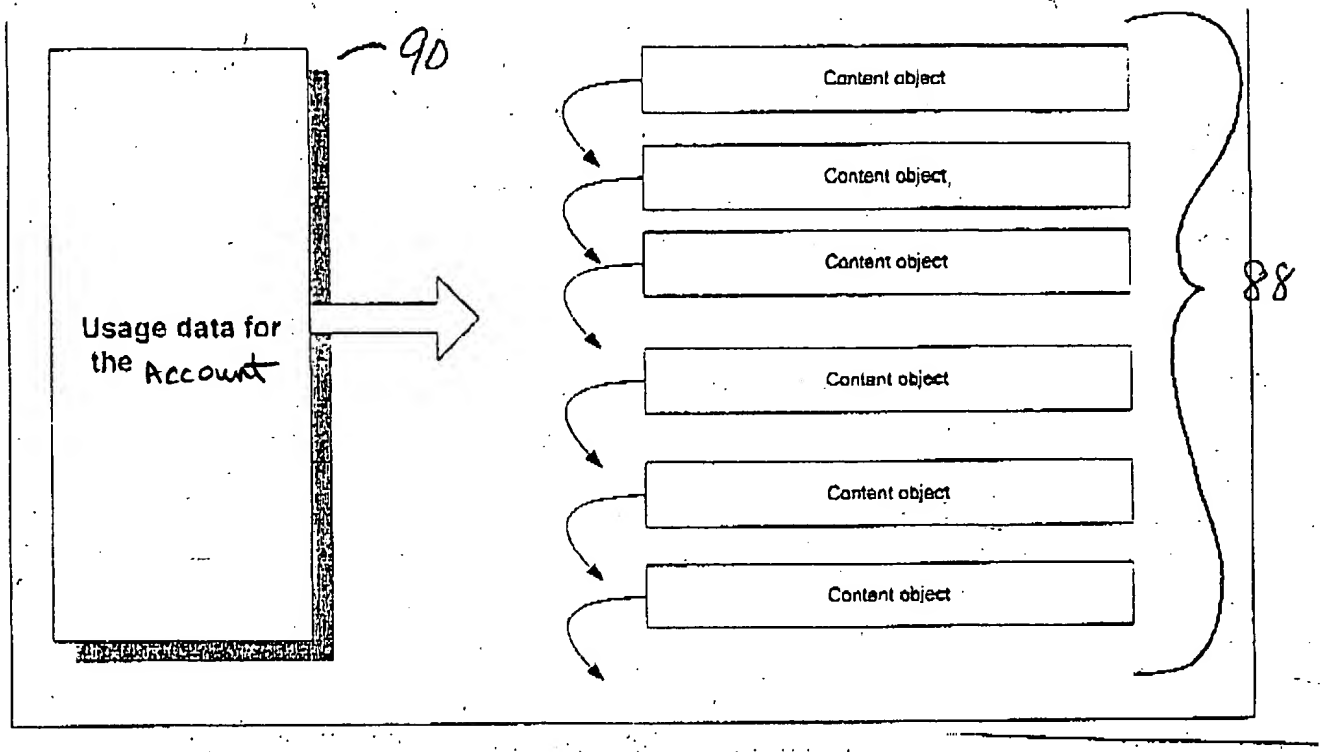
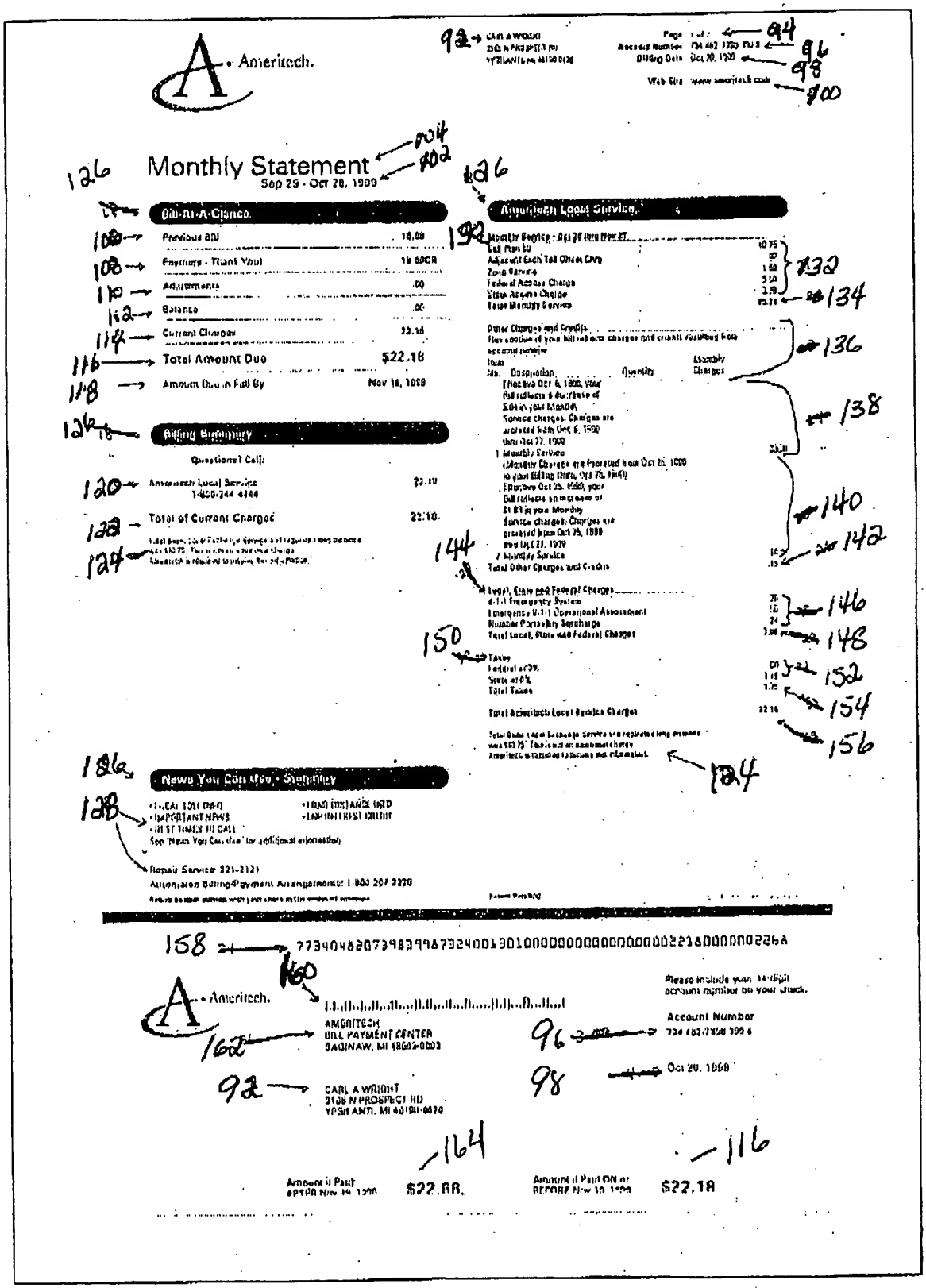

90
Usage data for the Account
Content object
Content object
Content object
Content object
Content object
Content object
88

FIG. 6A



Ameritech.

92 → CARL A WRIGHT
2108 N PROSPECT RD
YPSILANTI, MI 48198-9470

Page 1 of 2 ← 94
Account Number 734 482 7350 990 6 ← 96
Billing Date Oct 20, 1999 ← 98
Web Site www.ameritech.com ← 100

Monthly Statement
Sep 29 - Oct 28, 1999

104 / 102

126

Bill-At-A-Glance

106 → Previous Bill	18.58
108 → Payment - Thank You!	18.58CR
110 → Adjustments	.00
112 → Balance	.00
114 → Current Charges	22.18
116 → Total Amount Due	$22.18
118 → Amount Due In Full By	Nov 18, 1999

Billing Summary

Questions? Call:

120 → Ameritech Local Service 1-800-244 4444	22.18
122 → Total of Current Charges	22.18

124 →

126

Ameritech Local Service

192 Monthly Service : Oct 29 thru Dec 27

Line Plan 10	10.75
Additional Each Toll Chrge Only	.00
Zone Service	1.68
Federal Access Charge	3.25
State Access Charge	3.50
Total Monthly Service	19.18

132 / 134

Other Charges and Credits
For a portion of your Ameritech charges and credits resulting from a recent review
Date Description Quantity Charges

136

[Effective Oct 6, 1999, your Bill reflects a decrease of $.04 in your Monthly Service charges. Charges are prorated from Oct 6, 1999 thru Dec 27, 1999 -3.31

138

[Monthly Service charges are prorated from Oct 29, 1999 to your billing date, Oct 28, 1999. Effective Oct 29, 1999, your Bill reflects an increase of $1.83 in your Monthly Service charges. Charges are prorated from Oct 29, 1999 thru Dec 27, 1999 1.83

140

[Monthly Service .15

142

Total Other Charges and Credits -1.33

144

Local, State and Federal Charges

911 Emergency System	.75
Emergency 911 Operational Assessment	.12
Number Portability Surcharge	.24
Total Local, State and Federal Charges	1.11

146 / 148

150 → Taxes

Federal at 3%	.00
State at 6%	1.18
Total Taxes	1.18

152

Total Ameritech Local Service Charges 22.18

154

Total Other Local Exchange Service are registered long distance was $13.75. This is not an assessment charge. Ameritech is required to bill you on your statement.

156

184

186

News You Can Use - Simplified

188 →

+1+CALL 1011 (98-0
+IMPORTANT NEWS
+IT'S TOLL!S TO CALL
See "News You Can Use" for additional information

Repair Service 321-2121
Automation Billing/Payment Arrangements: 1-800 207 2220

Return this stub portion with your check in the enclosed envelope

Please Recycle

158 → 77340482073483998732400130100000000000000000022180000002264

160 →

Ameritech.

Please include your 14-digit account number on your check.

162 → AMERITECH
BILL PAYMENT CENTER
SAGINAW, MI 48605-0003

Account Number
96 → 734 482 7350 990 6

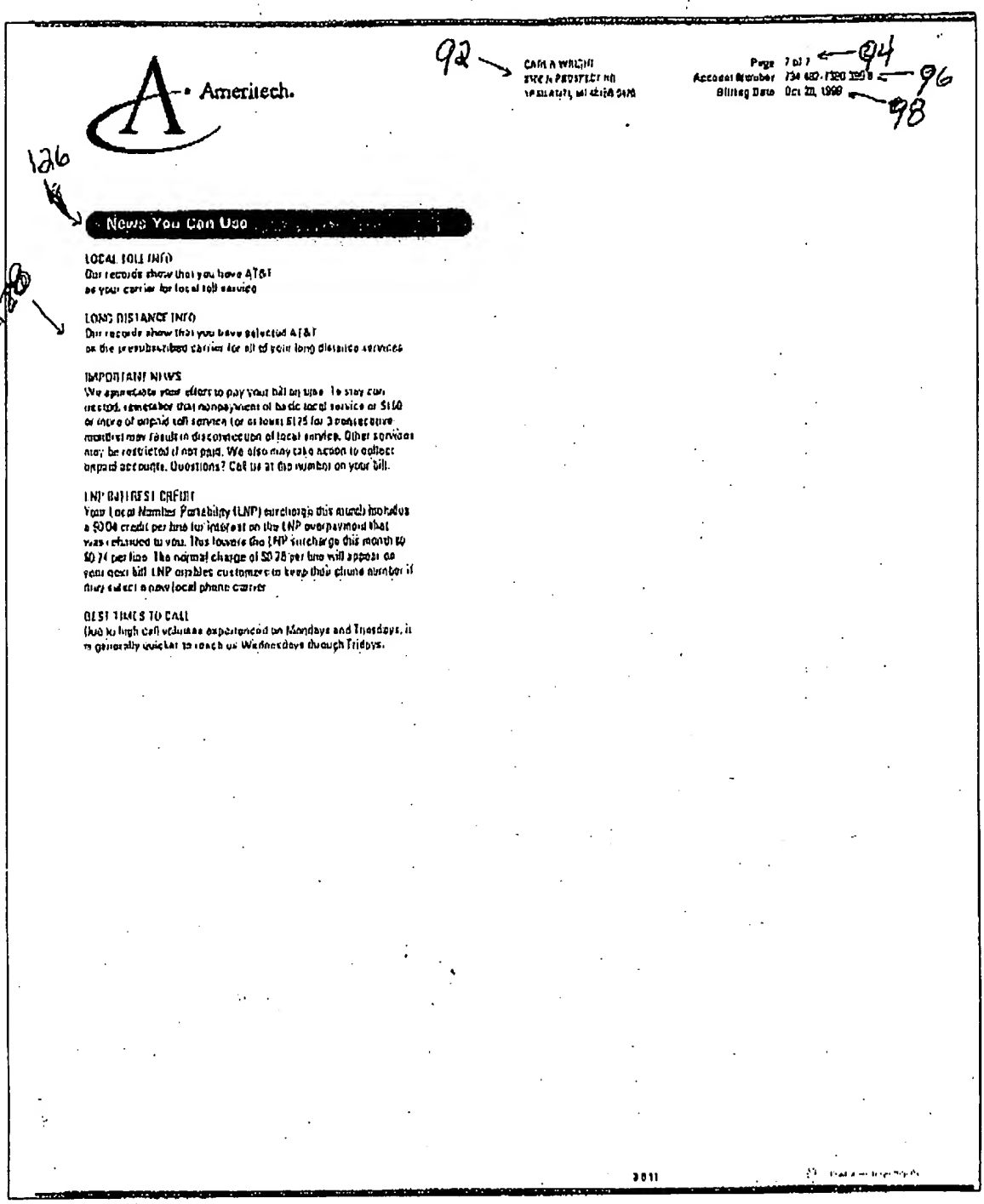
92 → CARL A WRIGHT
2108 N PROSPECT RD
YPSILANTI, MI 48198-9470

98 → Oct 20, 1999

164 → Amount if Paid AFTER Nov 18, 1999 $22.68

116 → Amount if Paid ON or BEFORE Nov 18, 1999 $22.18

FIG. 6B



92 → CARL A WRIGHT
STE N PROSPECT RD
[illegible]

Page 7 of 7 ← 94
Account Number [illegible] ← 96
Billing Date Oct 22, 1999 ← 98

Ameritech.

126 →

News You Can Use

LOCAL TOLL INFO
Our records show that you have AT&T
as your carrier for local toll service

LONG DISTANCE INFO
Our records show that you have selected AT&T
as the presubscribed carrier for all of your long distance services

IMPORTANT NEWS
We appreciate your efforts to pay your bill on time. To stay connected, remember that nonpayment of basic local service or $1.50 or more of unpaid toll service (or as low as $1.25 for 3 consecutive months) may result in disconnection of local service. Other services may be restricted if not paid. We also may take action to collect unpaid accounts. Questions? Call us at the number on your bill.

LNP BILLING CREDIT
Your Local Number Portability (LNP) surcharge this month includes a $0.04 credit per line for interest on the LNP overpayment that was refunded to you. This lowers the LNP surcharge this month to $0.74 per line. The normal charge of $0.78 per line will appear on your next bill. LNP enables customers to keep their phone number if they select a new local phone carrier.

BEST TIMES TO CALL
Due to high call volumes experienced on Mondays and Tuesdays, it is generally quicker to reach us Wednesdays through Fridays.

3011

[illegible]